CLAIMS

1. A method, comprising steps of:

(a) with at least one device supported by a user while the user is in locomotion on foot, determining at least one foot contact time of the user in locomotion;

(b) comparing a variable having the at least one determined foot contact time as a factor therein with a threshold value; and

(c1) if the variable is one of greater than or less than the threshold value, determining that the user is walking; and

(c2) if the variable is the other of greater than or less than the threshold value, determining that the user is running.

2. The method of claim 1, further comprising steps of:

(d1) if the user is walking, calculating at least one of a speed and a pace of the user using a first equation in which the at least one determined foot contact time is a factor; and

(d2) if the user is running, calculating the at least one of the speed and pace of the user using a second equation which is different than the first equation and in which the at least one determined foot contact time is a factor.

3. The method of claim 1, wherein the at least one determined foot contact time is the only variable factor in the variable.

4. The method of claim 1, wherein:

the method further includes a step of (d) determining a step time of the user in locomotion; and

the determined step time is a factor in the variable.

5. The method of claim 4, wherein:

the step (c1) includes a step of determining that the user if walking if the at least one determined foot contact time is greater than one half of the determined step time; and

the step (c2) includes a step of determining that the user is running if the at least one determined foot contact time is less than one half of the determined step time.

6. The method of claim 1, wherein:

the method further includes a step of (d) determining a foot air time of the user in locomotion; and

the determined foot air time is a factor in the variable.

7. The method of claim 6, wherein:

the step (c1) includes a step of determining that the user if walking if the at least one determined foot contact time is greater than the determined foot air time; and

the step (c2) includes a step of determining that the user is running if the at least one determined foot contact time is less than the determined foot air time.

8. A method, comprising steps of:

(a) determining at least one foot contact time of a user while the user is in locomotion on foot;

(b) comparing the at least one determined foot contact time with a threshold value; and

(c1) if the foot contact time is less than the threshold value, determining that the user is running; and

(c2) if the foot contact time is greater than the threshold value, determining that the user is walking.

9. The method of claim 8, further comprising steps of:

(d1) if the user is walking, calculating at least one of a speed and a pace of the user using a first equation in which the at least one determined foot contact time is a factor; and

(d2) if the user is running, calculating the at least one of the speed and pace of the user using a second equation which is different than the first equation and in which the at least one determined foot contact time is a factor.

10. A system, comprising:

at least one processor, adapted to be supported by a user while the user is in locomotion on foot, that determines at least one foot contact time of the user in locomotion,

and compares a variable having the at least one determined foot contact time as a factor therein with a threshold value; wherein, if the variable is one of greater than or less than the threshold value, the at least one processor determines that the user is walking, and, if the variable is the other of greater than or less than the threshold value, the at least one processor determines that the user is running.

11. The system of claim 10, wherein, if the user is walking, the at least one processor calculates at least one of a speed and a pace of the user using a first equation in which the at least one determined foot contact time is a factor, and, if the user is running, the at least one processor calculates the at least one of the speed and pace of the user using a second equation which is different than the first equation and in which the at least one determined foot contact time is a factor.

12. The system of claim 10, wherein the at least one determined foot contact time is the only variable factor in the variable.

13. A system, comprising:

at least one processor, adapted to be supported by a user while the user is in locomotion on foot, that determines at least one foot contact time of the user in locomotion, and compares the at least one determined foot contact time with a threshold value; wherein, if the foot contact time is less than the threshold value, the at least one processor determines that the user is running, and, if the foot contact time is greater than the threshold value, the at least one processor determines that the user is walking.

14. The system of claim 13, wherein, if the user is walking, the at least one processor calculates at least one of a speed and a pace of the user using a first equation in which the at least one determined foot contact time is a factor, and, if the user is running, the at least one processor calculates the at least one of the speed and pace of the user using a second equation which is different than the first equation and in which the at least one determined foot contact time is a factor.

15. A system, comprising:

at least one sensor, adapted to be supported by a user while the user is in locomotion on foot, that determines at least one foot contact time of the user in locomotion;

means, adapted to be supported by the user while the user is in locomotion on foot, for comparing a variable having the at least one determined foot contact time as a factor therein with a threshold value;

means, adapted to be supported by the user while the user is in locomotion on foot, for determining that the user is walking if the variable is one of greater than or less than the threshold value; and

means, adapted to be supported by the user while the user is in locomotion on foot, for determining that the user is running if the variable is the other of greater than or less than the threshold value.

16. The system of claim 15, wherein the at least one sensor does not require compression forces thereon to determine the foot contact time of the user.

17. A system, comprising:

at least one sensor, adapted to be supported by a user while the user is in locomotion on foot, that determines at least one foot contact time of the user in locomotion;

means, adapted to be supported by the user while the user is in locomotion on foot, for comparing the at least one determined foot contact time with a threshold value;

means, adapted to be supported by the user while the user is in locomotion on foot, for determining that the user is running if the foot contact time is less than the threshold value; and

means, adapted to be supported by the user while the user is in locomotion on foot, for determining that the user is walking if the foot contact time is greater than the threshold value.

18. The system of claim 17, wherein the at least one sensor does not require compression forces thereon to determine the foot contact time of the user.

19. A method, comprising a step of:

(a) with at least one device supported by a user while the user is in locomotion on foot on a surface, determining an amount of force exerted by at least one foot of the user on the surface during at least one footstep taken by the user.

20. The method of claim 19, wherein the step (a) includes determining an average amount of force exerted by the at least one foot of the user on the surface during the at least one footstep.

21. The method of claim 19, wherein the step (a) includes steps of:

(a1) monitoring movement of the at least one foot with at least one sensor;

(a2) analyzing an output of the at least one sensor to determine at least one foot contact time of the user; and

(a3) calculating the amount of force exerted by the at least one foot on the surface based upon the determined at least one foot contact time.

22. The method of claim 21, wherein the at least one sensor does not require compression forces thereon to sense movement.

23. The method of claim 22, wherein the at least one sensor includes an accelerometer.

24. The method of claim 19, wherein the step (a) includes steps of:

(a1) monitoring movement of the at least one foot with at least one sensor;

(a2) analyzing an output of the at least one sensor to determine at least one step time of the user; and

(a3) calculating the amount of force exerted by the at least one foot on the surface based upon the determined at least one step time.

25. The method of claim 24, wherein the at least one sensor does not require compression forces thereon to sense movement.

26. The method of claim 25, wherein the at least one sensor includes an accelerometer.

27. The method of claim 21, wherein the step (a) further comprises the steps of:

(a4) analyzing the output of the at least one sensor to determine at least one step time of the user; and

(a5) calculating the amount of force exerted by the at least one foot on the surface based upon the determined at least one step time.

28. A system, comprising:

at least one processor adapted to be supported by a user while the user is in locomotion on foot on a surface, the at least one processor being configured to identify an amount of force exerted by at least one foot of the user on the surface during at least one footstep taken by the user.

29. The system of claim 28, wherein the at least one processor is configured to identify an average amount of force exerted by the at least one foot of the user on the surface during the at least one footstep.

30. The system of claim 28, further comprising at least one sensor that monitors movement of the at least one foot, and wherein the at least one processor is configured to analyze an output of the at least one sensor to determine at least one foot contact time of the user, and to calculate the amount of force exerted by the at least one foot on the surface based upon the determined at least one foot contact time.

31. The system of claim 30, wherein the at least one sensor does not require compression forces thereon to sense movement.

32. The system of claim 31, wherein the at least one sensor includes an accelerometer.

33. The system of claim 28, further comprising at least one sensor that monitors movement of the at least one foot, and wherein the at least one processor is configured to analyze an output of the at least one sensor to determine at least one step time of the user, and to calculate the amount of force exerted by the at least one foot on the surface based upon the determined at least one step time.

34. The system of claim 33, wherein the at least one sensor does not require compression forces thereon to sense movement.

35. The system of claim 34, wherein the at least one sensor includes an accelerometer.

36. The system of claim 30, wherein the at least one processor is further configured to analyze the output of the at least one sensor to determine at least one step time of the user, and to calculate the amount of force exerted by the at least one foot on the surface based upon the determined at least one step time.

37. A system, comprising:

at least one sensor adapted to be supported by a user while the user is in locomotion on foot on a surface; and

means for identifying an amount of force exerted by at least one foot of the user on the surface during at least one footstep taken by the user based upon an output of the at least one sensor.

38. A method, comprising steps of:

(a) with at least one sensor supported by a user, monitoring movement of the user while the user is in locomotion on foot; and

(b) determining a cadence of the user based upon an output of the at least one sensor.

39. The system of claim 38, wherein the at least one sensor does not require compression forces thereon to monitor movement of the user.

40. The method of claim 38, wherein:

the step (a) includes monitoring movement of at least one foot of the user; and

the step (b) includes steps of (b1) analyzing an output of the at least one sensor to determine at least one step time of the user, and (b2) determining the cadence of the user based upon the determined at least one step time.

41. The method of claim 38, further comprising steps of:

(c) based upon the output of the at least one sensor, determining values of the user's average cadence during one of respective time intervals and respective distance intervals; and

(d) storing in memory information representing the determined values of the user's average cadence for the one of the respective time intervals and the respective distance intervals.

42. The method of claim 38, further comprising steps of:

(c) based upon the output of the at least one sensor, determining the user's average cadence during one of respective time intervals and respective distance intervals; and

(d) displaying a representation of the determined values of the user's average cadence for the one of the respective time intervals and the respective distance intervals.

43. A method, comprising steps of:

(a) with at least one sensor supported by a user while the user is in locomotion on foot, monitoring movement of the user while the user is in locomotion on foot; and

(b) determining a stride length of the user during at least one footstep taken by the user based upon an output of the at least one sensor.

44. The method of claim 43, wherein the at least one sensor does not require compression forces thereon to monitor movement of the user.

45. The method of claim 43, further comprising steps of:

(c) based upon the output of the at least one sensor, determining a stride length of the user for each of a plurality of footsteps taken by the user; and

(d) storing in memory information regarding the determined stride lengths for the plurality of footsteps.

46. The method of claim 43, further comprising steps of:

(c) based upon the output of the at least one sensor, determining a stride length of the user for each of a plurality of footsteps taken by the user; and

(d) displaying information regarding the determined stride lengths for the plurality of footsteps.

47. The method of claim 43, wherein:

the step (a) includes monitoring movement of at least one foot of the user; and

the step (b) includes steps of (b1) analyzing an output of the at least one sensor to determine at least one of a pace and a speed of the user during the at least one footstep, and (b2) determining the stride length of the user based upon the determined at least one of the pace and the speed of the user.

48. The method of claim 43, further comprising steps of:

(c) based upon the output of the at least one sensor, determining values of the user's average stride length during one of respective time intervals and respective distance intervals; and

(d) storing in memory information representing the determined values of the user's average stride length for the one of the respective time intervals and the respective distance intervals.

49. The method of claim 43, further comprising steps of:

(c) based upon the output of the at least one sensor, determining values of the user's average stride length during one of respective time intervals and respective distance intervals; and

(c) displaying a representation of the determined values of the user's average stride length for the one of the respective time intervals and the respective distance intervals.

50. The method of claim 43, wherein:

the step (a) includes monitoring movement of at least one foot of the user; and

the step (b) includes steps of (b1) analyzing an output of the at least one sensor to determine at least one foot contact time of the user during the at least one footstep; and (b2) determining the stride length of the user based upon the determined at least one foot contact time of the user.

51. The method of claim 43, wherein:

the step (a) includes monitoring movement of at least one foot of the user; and

the step (b) includes steps of (b1) analyzing an output of the at least one sensor to determine at least one step time of the user during the at least one footstep, and (b2) determining the stride length of the user based upon the determined at least one step time of the user.

52. A system, comprising:

at least one sensor adapted to be supported by a user and to monitor movement of the user while the user is in locomotion on foot; and

at least one processor that determines a cadence of the user based upon an output of the at least one sensor.

53. The system of claim 52, wherein the at least one sensor does not require compression forces thereon to monitor movement of the user.

54. The system of claim 52, wherein:

the at least one sensor is adapted to monitor movement of at least one foot of the user; and

the at least one processor is configured to analyze an output of the at least one sensor to determine at least one step time of the user, and to determine the cadence of the user based upon the determined at least one step time.

55. The system of claim 52, wherein the at least one processor is configured to, based upon the output of the at least one sensor, determine values of the user's average cadence during one of respective time intervals and respective distance intervals, and wherein the system further comprises a display that displays a representation of the determined values of the user's average cadence for the one of the respective time intervals and the respective distance intervals.

56. A system, comprising:

at least one sensor adapted to be supported by s user and to monitor movement of the user while the user is in locomotion on foot; and

at least one processor that, based upon an output of the at least one sensor, determines a stride length of the user during at least one footstep taken by the user.

57. The system of claim 56, wherein the at least one sensor does not require compression forces thereon to monitor movement of the user.

58. The system of claim 56, wherein the at least one processor is configured to, based upon the output of the at least one sensor, determine a stride length of the user for each of a plurality of footsteps taken by the user, and wherein the system further comprises a display that displays information regarding the determined stride lengths for the plurality of footsteps.

59. The system of claim 56, wherein:

the at least one sensor is adapted to monitor movement of at least one foot of the user; and

the at least one processor is configured to analyze an output of the at least one sensor to determine at least one of a pace and a speed of the user during the at least one footstep, and to determine the stride length of the user based upon the determined at least one of the pace and the speed of the user.

60. The system of claim 56, wherein the at least one processor is configured to, based upon the output of the at least one sensor, determine values of the user's average stride length during one of respective time intervals and respective distance intervals, and wherein the system further comprises a display that displays a representation of the determined values of the user's average stride length for the one of the respective time intervals and the respective distance intervals.

61. The system of claim 56, wherein the at least one sensor is adapted to monitor movement of at least one foot of the user, and wherein the at least one processor is configured to analyze an output of the at least one sensor to determine at least one foot contact time of the user during the at least one footstep, and to determine the stride length of the user based upon the determined at least one foot contact time of the user.

62. The system of claim 56, wherein the at least one sensor is adapted to monitor movement of at least one foot of the user, and wherein the at least one processor is configured to analyze an output of the at least one sensor to determine at least one step time of the user during the at least one footstep, and to determine the stride length of the user based upon the determined at least one step time of the user.

63. A system, comprising:

at least one sensor adapted to be supported by a user and to monitor movement of the user while the user is in locomotion on foot; and

means for determining a cadence of the user based upon an output of the at least one sensor.

64. The system of claim 63, wherein the at least one sensor does not require compression forces thereon to monitor movement of the user.

65. A system, comprising:

at least one sensor adapted to be supported by a user and to monitor movement of the user while the user is in locomotion on foot; and

means for determining a stride length of the user during at least one footstep taken by the user based upon an output of the at least one sensor.

66. The system of claim 65, wherein the at least one sensor does not require compression forces thereon to monitor movement of the user.